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cont.

said composition having a limiting oxygen index
in the range of 45% to 65%.

REMARKS

Upon entry of the present amendments, claims 1-24 will
remain pending in the present application.

Previous Rejection of Claims 1-24 under 35 U.S.C. §112

As to the earlier rejection of claims 1-24 for
indefiniteness in view of the use of the term "nanoclay",
the Advisory Action indicated that the "first part of the
112 rejection" had been overcome in the applicants' October
21, 2002 Amendment After Final Rejection. Applicants
therefore submit that that, in view of the indication in
the Advisory Action, and for the reasons set forth in the
after-final submission, namely that the term "nanoclay" has
definite meaning, both as set forth in the present
specification and in the field of technology involved here
generally, the indefiniteness rejection should be
considered withdrawn.

Previous Rejection of Claims 1-24
for Obviousness under 35 U.S.C. §103(a)

In the final Office Action dated August 20, 2002, claims 1-
24 were rejected as being unpatentable for obviousness under

U.S.C. §103(a) in view of combinations of five or more cited references. In accordance with the suggestion in the Advisory Action, independent claims 1, 19 and 23 have been amended herein to include the limitation requiring that the claimed compositions have a limiting oxygen index (LOI) in the range of 45% to 65%. The remaining claims all depend from the amended independent claims, and therefore also include the LOI limitation.

Applicants submit that the cited references cannot render the amended claims unpatentable for obviousness because none of the references, either alone or in proper combination, discloses or suggests a non-dripping, flame retardant, fluoropolymeric composition that includes (a) a fluoropolymeric base polymer (in the case of claims 1-22) or a PVDF resin (in the case of claims 23 and 24), and (b) a nanoclay additive, in which the composition has a limiting oxygen index in the range of 45% to 65%. As set forth in the applicants' specification, and as is also well recognized by persons skilled in the technology involved here, limiting oxygen index (LOI) value is the minimum concentration of oxygen (expressed as percent by volume) in a mixture of oxygen and nitrogen that will support flaming combustion of a material that is initially at room temperature. A higher LOI value indicates a less flammable material. The

present specification states (see, for example, pages 1, 3 and 4), flame retardancy is an important characteristic of the applicants' claimed compositions. In this regard, the high LOI values associated with the claimed compositions are identified as contributing to their favorable flame retardancy characteristics. (See specification at page 4). In the experimental batches described in the specification, the compositions exhibited LOI values no lower than approximately 45% (the precise value disclosed is 45.5%). (See specification at pages 10 and 13).

The cited references nowhere disclose or suggest LOI values recited for the claimed compositions. In fact, only Thulliez (U.S. Patent No. 6,054,538) discloses LOI values at all, achieving at best a value of 38%. (See Thulliez, Table at columns 7-8). Thulliez provides no additional teaching regarding LOI values or even flame retardancy in general beyond simply listing LOI values in the table. Ellsworth (U.S. Patent No. 5,962,553) mentions the possibility of adding flame retardants to the disclosed compositions (see column 8, line 7), but provides no further disclosure as to the formation of a composition that includes a fluoropolymeric base polymer and a nanoclay additive and in which the composition has a limiting oxygen index in the range of 45% to 65%. Ellsworth discloses no

LOI values at all. Similarly, Kutnyak (U.S. Patent No. 4,356,284) mentions the possibility of improving flammability characteristics through the use of certain additives, but provides no teaching or suggestion with regard to LOI values (see column 2, lines 41-46). In fact, Kutnyak relates only to polymer compositions, and provides no disclosure, suggestion or motivation to include nanoclay additives in its the disclosed compositions. None of the other cited prior art references provides any teaching whatsoever as to flame retardancy or the improvement thereof.

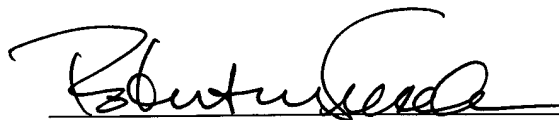
Absent any disclosure, suggestion or teaching as to flame retardant, fluoropolymeric compositions having a limiting oxygen index in the range of 45% to 65%, the cited references, alone or in combination, cannot render amended claims 1-24 unpatentable for obviousness. Applicants therefore submit that amended claims 1-24 are now in condition for allowance.

* * * * *

In view of the foregoing amendments and remarks, applicants respectfully submit that claims 1-24 are allowable. The Examiner is invited to telephone the applicants' undersigned attorney at (312) 775-8123 if any unresolved matters remain.

Please charge any fees incurred in connection with this submission to Deposit Account No. 13-0017.

Respectfully submitted,



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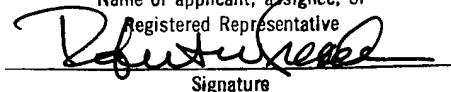
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Name of applicant, assignee, or
Registered Representative



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Date of Signature

ATTACHMENT A

MARKED-UP VERSION SHOWING AMENDMENTS MADE

Claims 1, 19 and 23 have amended as follows:

1. (Amended once) A non-dripping, flame retardant, fluoropolymeric composition comprising:

- (a) a fluoropolymeric base polymer; and
- (b) a nanoclay additive;

said composition having a limiting oxygen index in the range of 45% to 65%.

19. (Amended once) A method for preparing an exfoliated thermoplastic elastomer blend of a fluoropolymer and a nanocomposite, said blend having a limiting oxygen index in the range of 45% to 65%, comprising dynamically mixing said fluoropolymer and said nanocomposite in a ratio of from about 99:1 to about 50:50 parts by weight, respectively.

23. (Amended once) A non-dripping, flame retardant fluoropolymeric composition comprising:

- (a) PVDF resin; and
- (b) a nanoclay selected from the group consisting of synthetic silicate montmorillonites, natural layered

silicate montmorillonites and a layered
alumina-silicate;

said composition having a limiting oxygen index in the
range of 45% to 65%.